

REMARKS

In response to the Office Action mailed on June 17, 2004, Applicants respectfully request reconsideration.

Claims 2-38, 40-70 and 72-74 are pending for examination, with claims 8, 19, 42, 43, 44, 45, 49, 52, 53 and 73 being independent claims. By this Amendment, claims 2-5, 9-10, 12-13, 18, 26-27, 30-34, 57-58, 60-61, 65-66, 68-70 and 72 have been amended, and claims 8, 11, 19-25, 28-29, 49-56 and 59 have been re-presented. No claims have been added. The application as now presented is believed to be in allowable condition.

As indicated above, claims 8, 11, 19-25, 28-29, 49-56 and 59, which were cancelled without prejudice or disclaimer in response to a previous Office Action, have been re-presented, such that claims 2-38, 40-70 and 72 as now pending are identical to the claims presented in Applicants' response dated October 22, 2003 to a second Office Action mailed July 22, 2003 (i.e., the claims now presented are identical to the claims pending as of the third Office Action). Applicants subsequently added claims 73 and 74 in a response dated March 25, 2004 to a third Office Action mailed December 23, 2003, and claims 73-74 are still pending.

A. Allowed Claims/Allowable Subject Matter

Applicants note with appreciation that on page 20 of the present Office Action, claims 45-48 are allowed. The Office Action also indicates that claims 2-7, 13-18 and 65-67 are allowed. Claims 2-5, 13 and 65-66 have been amended herein, and are still believed to be in allowable condition, as discussed further below.

B. Summary of Case File History

Applicants wish to bring to the Examiner's attention a brief review of the file history of this application, to point out what are respectively believed to be some procedural anomalies.

A first Office Action in this application was mailed on February 4, 2003, in which claims 53-70 were allowed, claims 8-38 and 42-52 were indicated as allowable (if amended to include their respective base claims and any intervening claims), and the remaining claims were rejected over Bailey (U.S. Patent No. 5,752,766) and Havel (U.S. Patent No. 6,181,126). In Applicants'

response dated April 18, 2003 to this first Office Action, Applicants essentially amended and cancelled claims as necessary to accept the subject matter deemed allowable by the Examiner, with the hope of expediting prosecution towards allowance.

In a second Office Action mailed July 22, 2003, the allowance and allowability of claims as originally indicated in the first Office Action was withdrawn, and all of the pending claims were newly rejected as allegedly obvious over Belliveau (U.S. Patent No. 4,962,687). In Applicants' response dated October 22, 2003, none of the claims was amended to overcome the Belliveau reference; rather, Applicants presented substantive arguments to rebut the claim rejections over Belliveau. Additionally, claims 42-45, 49 and 53 were amended to address minor indefiniteness issues (but, again, not to overcome any rejections over prior art).

In a third Office Action mailed December 23, 2003, claims 40-48 were allowed. Thus, it is clear from the third Office Action that Applicants successfully argued for the patentability of these claims over the Belliveau reference, and in fact the Belliveau reference was not further considered at all in the third Office Action. Claims 9-10, 12-17, 26, 27, 31, 34-38, 57-58, 65, 68-70 and 72 were indicated as allowable, and the remaining claims 2-8, 11, 18-25, 28-30, 32, 33, 49-56, 59-64, 66 and 67 were rejected as allegedly being either anticipated or obvious over a newly presented reference to Havel (U.S. Patent No. 6,133,722). In Applicants' response dated March 25, 2004 to this third Office Action, Applicants again essentially amended and cancelled claims as necessary to accept the subject matter deemed allowable by the Examiner, again with the hope of expediting prosecution towards allowance. Applicants also added claims 73 and 74.

In the current and fourth Office Action, the Examiner has again withdrawn the allowance and allowability of claims as indicated in the third Office Action "in view of *newly* discovered reference(s) to Belliveau et al. (USP. 4,962,687)" (June 17, 2004 Office Action, page 2, paragraph 2; emphasis added). Applicants are, quite frankly, perplexed by this action; first, Belliveau is hardly a "newly" discovered reference, as it was indeed the primary reference previously asserted in the second Office Action. Moreover, the reasons provided in the current Office Action for applying Belliveau as a reference against the claims were already successfully rebutted in detail in Applicants' response to the second Office Action.

C. The Present Office Action is Improper Pursuant to MPEP §706.04

MPEP §706.04 states that a claim noted as allowable shall thereafter be rejected only after the proposed rejection has been submitted to the primary examiner for consideration of all the facts and approval of the proposed action. This section of the MPEP further specifies that “great care should be exercised in authorizing such a rejection.”

The Applicants respectfully submit that the present Office Action is improper in view of MPEP §706.04.

In particular, claims previously noted as allowable now stand rejected (this has happened on at least two occasions thus far in the prosecution history). Furthermore, indeed it does not appear that “great care” has been exercised in authorizing the rejections set forth in the present Office Action, because all of the current rejections of the claims are based on a reference (i.e., Belliveau) that was already cited two Office Actions prior (i.e., in the second of four Office Actions to date), and removed from consideration in the prior (i.e., third) Office Action. This clearly contradicts the practice guidelines established in MPEP §706.04.

D. Applicants’ Responses to Rejections and Objections in the Present (Fourth) Office Action and the Third Office Action mailed December 23, 2003.

While Applicants believe that the present Office Action is improper, Applicants nonetheless provide below full responses to each of the issues raised in the present Office Action so that the current paper may not be deemed non-responsive.

Additionally, since Applicants have re-presented previously cancelled claims such that the claims now pending include claims formerly pending as of the third Office Action mailed December 23, 2003, Applicants also provide below full responses to each of the issues raised in the third Office Action with respect to the re-presented claims.

1. Response to Present (Fourth) Office Action

a. Claim Rejections under 35 U.S.C. §102(b)

Claims 41-44 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,962,687 to Belliveau et al. Applicants respectfully traverse these rejections.

Each of Applicants' independent method claims 42-44 is directed to a method of illuminating a liquid, comprising, *inter alia*, an act of illuminating the liquid with variable color radiation that is generated **without requiring the use of a color filter** (emphasis added).

In contrast to Applicants' claims, Belliveau completely fails to disclose or suggest any method whatsoever of illuminating a liquid, as recited in claims 42-44. Rather, the only practical applications for the system disclosed in Belliveau are stage, theatre, nightclub, studio and architectural lighting applications (col. 13, lines 30, *et seq.*).

More significantly, Belliveau completely fails to disclose or suggest variable color radiation that is generated without requiring the use of a color filter, as also recited in claims 42-44. In fact, it is significantly noteworthy that precisely the opposite is true; namely, an essential component of Belliveau's apparatus necessarily includes one or more color filters to generate colored light. Hence, Belliveau *teaches away* from the concept of generating variable color radiation without requiring the use of a color filter.

On page 2, in numbered paragraph 3, the present Office Action contends that Belliveau discloses illuminating a liquid with variable color radiation that is generated without requiring the use of a color filter, allegedly in col. 8 - line 24, col. 10 - line 30 and Fig. 4 of Belliveau's disclosure. This assertion is incorrect. In the cited passages, there is absolutely no mention or suggestion whatsoever, or anywhere else in the Belliveau disclosure, of generating variable color radiation without requiring the use of one or more color filters. That Belliveau necessarily requires color filters to produce multicolor light is evident in the figures and descriptions thereof, as discussed in detail in Applicants' response dated October 22, 2003 to the second Office Action mailed July 22, 2003.

For at least the foregoing reasons, claims 42-44 patentably distinguish over Belliveau and are in condition for allowance. Claim 41 depends from claim 42, and is similarly allowable based on its dependency.

b. Claim Rejections under 35 U.S.C. §103

Claims 9, 10, 12, 26-27, 30-38, 40, 57-58, 60-64, 68-70 and 72-74 were rejected under 35 U.S.C. §103 as allegedly being obvious over Belliveau in view of DeGarmo (U.S. Patent No. 3,192,379). Applicants respectfully traverse these rejections.

Each of the above-mentioned claims depends from what is believed to be an allowable independent claim; accordingly, the indicated claims are also believed to be allowable based at least upon their dependency. For completeness, however, Applicants set forth below the impropriety of the claim rejections under 35 U.S.C. §103 based on 1) elements of Applicants' claims that are entirely missing from both of the Belliveau and DeGarmo references; and 2) the improper combination of Belliveau and DeGarmo.

The present Office Action alleges in numbered paragraph 5 on page 4 that Belliveau discloses an apparatus for remotely controlled illumination of LEDs adapted to illuminate a liquid without the use of a color filter. As discussed above in connection with the claim rejections under 35 U.S.C. §102, these assertions are completely without merit; nowhere in the reference does Belliveau disclose or suggest illumination of a liquid, the use of LEDs, or the generation of variable color radiation without the use of a color filter. Again, Belliveau absolutely requires the use of one or more color filters to generate variable color radiation.

The Office Action acknowledges that Belliveau is silent regarding the limitation in at least some of the indicated claims that a light source be adapted to be supported by a pool to illuminate a liquid contained in the pool. The Office Action then alleges that it would have been obvious to one of ordinary skill in the art to modify Belliveau by installing the light source in a pool as taught by DeGarmo. The Office Action further alleges that one of ordinary skill in the art would be motivated to so modify the device in Belliveau for generating remotely controllable variable color radiation output to illuminate the liquid in the pool, but fails to provide any reasons for such alleged motivation. The Applicants do not agree with the Examiner's characterizations of the Belliveau and DeGarmo references, nor do they agree that the references are properly combinable.

As set forth in MPEP §2143, three criteria must be met in order to establish a *prima facie* case of obviousness. First, there must be some motivation, either in the cited reference(s) or in the knowledge generally available to one of ordinary skill in the art, to modify the reference(s).

Second, there must be a reasonable expectation of success. Third, the reference(s) must teach or suggest all of the claimed features. The teaching or suggestion to modify the reference(s), as well as the reasonable expectation of success, must both be found in the prior art and not based on Applicants' disclosure.

The indicated claim rejections are improper at least based on the failure to meet the third criterion specified in MPEP §2143; namely, Belliveau and DeGarmo fail to teach or suggest all of the features recited in Applicants' claims.

Specifically, each of Applicants' presently pending independent claims recites a feature of variable color radiation generated without the use of a color filter. This feature therefore also is included by reference in each of the rejected dependent claims. DeGarmo discloses only illuminating a swimming pool using a conventional incandescent white light fixture; specifically, DeGarmo makes no mention of colored light whatsoever. As discussed above, Belliveau necessarily requires the use of one or more color filters to generate colored light. Accordingly, no combination of features from Belliveau and DeGarmo could possibly render Applicants' claims obvious, as any combination of features from these references still would be lacking at least one feature recited in each of Applicants' claims; namely, variable color radiation generated without the use of a color filter.

Furthermore, there is no motivation to combine Belliveau and DeGarmo. As stated above, Belliveau does not disclose or suggest illuminating a liquid with light. The only industrial applications for the system disclosed in Belliveau are stage, theatre, nightclub, studio and architectural applications (Belliveau, col. 13, lines 30, et seq.). Unlike Belliveau, DeGarmo discloses an illumination device for lighting a swimming pool. DeGarmo's device includes a single conventional light bulb adapted to produce white light. DeGarmo discloses that it was an objective to produce a device having a low operating voltage and high intensity light output (DeGarmo, col. 1, lines 24-27), to produce a device capable of dissipating heat using a structure that utilizes pool water as a cooling medium (DeGarmo, col. 1, lines 36-41), and to produce a device requiring a minimal amount of excavation to enable the device to be flush mounted along a wall of the pool (DeGarmo, col. 1, lines 62-64).

In contrast to DeGarmo, Belliveau teaches a lighting device having three filtered light sources that produce respectively different colors. As stated above, among the objectives

DeGarmo discloses for the device disclosed therein are low operating voltage; reduced heat generation; and a minimal amount of excavation to enable the device to be flush mounted along a wall of the pool. Mounting to a pool a device such as the device disclosed in Belliveau, which has three differently colored sources, is contrary to the stated objectives of DeGarmo because such a device requires more voltage, generates more heat and requires more space. Accordingly, DeGarmo teaches away from making a modification to add two additional light sources such as those disclosed in Belliveau.

The Office Action alleges that it would have been obvious to one of ordinary skill in the art to modify Belliveau by installing the light source in a pool as taught by DeGarmo. The Office Action further alleges that one of ordinary skill in the art would be motivated to so modify the device in Belliveau for generating remotely controllable variable color radiation output to illuminate the liquid in the pool. Applicants disagree.

In the present instance, motivation for modifying Belliveau in the manner suggested in the Office Action is completely absent; nowhere in the art of record is there motivation to modify Belliveau in the manner suggested in the Office Action. The only place that it is disclosed that variable color radiation should be used to illuminate a liquid in a pool is in the present application. Accordingly, the alleged motivation for the combination of Belliveau and DeGarmo is based on impermissible hindsight reasoning. If the Examiner believes such motivation is found beyond Applicants' own disclosure and in "the knowledge generally available to one of ordinary skill in the art," the Applicant respectfully requests that Examiner provide support for such allegation pursuant to MPEP §2144.03.

Because the combination of Belliveau and DeGarmo is improper for at least the above reasons, the Applicants respectfully submit that all of the presently pending claims are patentable over this combination, and request that all rejections based on said combination be withdrawn.

2. Response to the Third Office Action mailed December 23, 2003

Because re-presented independent claims 8, 19, 49, 52 and 53 were canceled without prejudice or disclaimer in the Applicants' response mailed March 23, 2004 to the third Office Action mailed December 23, 2003 (so as to accept the subject matter deemed allowable by the Examiner and thereby expedite prosecution towards allowance), arguments regarding the

patentability of claims 8, 19, 49, 52 and 53 were not presented at that time. Accordingly, for completeness of the present response, arguments in response to rejections of said claims in the Office Action mailed December 23, 2003 are provided herein below. Only responses to the rejections of claims 8, 19, 49, 52 and 53 are provided herein, as arguments regarding the remaining claims were provided in the Applicants' response mailed March 23, 2004, or are provided elsewhere herein.

a. Claim Objections

On page 2 of the Office Action mailed December 23, 2003, claims 8, 19, 49 and 52 were objected to because of various informalities. The Applicants respectfully disagree with the objection to claims 8, 19, 49 and 52 that "a color" should be changed to "the color." The term "a color" has no antecedent basis in these claims. Accordingly, amending these claims to recite the term "the color" would be improper.

b. Claim Rejections under 35 U.S.C. §112

On page 3 of the Office Action mailed December 23, 2003, claim 49 was rejected under 35 U.S.C. §112, second paragraph.

The Applicants traverse the rejection of claim 49. The second step of the method, which is clearly labeled "b)," recites an act of remotely controlling at least a color of variable color radiation. The "wherein clause" further specifies that act b) comprises an act of remotely initiating execution of at least one program so as to control the variable color radiation. Accordingly, the Applicants believe that claim 49 particularly points out and distinctly claims the recited subject matter.

c. Rejections Under 35 U.S.C. §102

The Office Action mailed December 23, 2003 rejected claims 49-52 under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 6,133,722 to Havel (hereinafter Havel). Applicants respectfully traverse these rejections.

Havel is directed to a variable color digital measuring device (i.e., a digital multimeter) to measure various physical properties such as voltage, current, resistance and the like. Havel

states that his invention resides in the use of a multicolor digital display that can provide measured values of various physical parameters in different colors (col. 7, line 52.) Specifically, Havel discloses that sets of LEDs, each comprising LEDs of different colors, form the individual segments of seven-segment alphanumeric display elements used in the multimeter's display panel. As such, the device is able to display measured values using various colors.

Independent method claim 49 recites, *inter alia*, a step of “illuminating a liquid with variable color radiation....” (emphasis added). With respect to claim 49, the December 23, 2003 Office Action merely asserts, on pages 3 and 4, that Havel discloses a method of illuminating a display comprising steps of: illuminating the display with variable color radiation that is generated without requiring the use of a color filter; remotely controlling the variable color radiation; remotely executing at least one illumination program; remotely selecting a particular illumination program; remotely adjusting the parameters associated with the illumination program; and indicating to a user a status of a parameter. Applicants do not agree with the Examiner's foregoing characterization of Havel, and further respectfully point out that the foregoing characterization is completely irrelevant for a rejection of independent method claim 49 under 35 U.S.C. §102.

Specifically, Havel does not disclose or suggest using radiation to illuminate a liquid. Havel merely discloses a digital multimeter having a multicolor alphanumeric display. It is not at all apparent how one of ordinary skill would reasonably contemplate illuminating a liquid with light from the display of Havel's digital multimeter. Nowhere in the reference does Havel disclose or suggest that the digital multimeter should be immersed in a liquid or placed near a liquid so as to illuminate the liquid. Accordingly, claim 49 patentably distinguishes over Havel for at least this reason. Claims 50 and 51 depend from claim 49 and are patentable for at least the same reasons as claim 49.

Like claim 49, claim 52 recites, *inter alia*, a step of “illuminating a liquid with variable color radiation....” Accordingly, claim 52 patentably distinguishes over Havel for at least the same reasons discussed in connection with claim 49.

d. Rejections Under 35 U.S.C. §103

The Office Action mailed December 23, 2003 rejected claims 2-8, 11, 18-25, 28-30, 32-33, 53-56, 59-64, and 66-67 under 35 U.S.C. §103(a) as allegedly being obvious over Havel. Applicants respectfully traverse these rejections.

Of the claims rejected under 35 U.S.C. §103, claims 8, 19 and 53 are independent claims. With respect to independent claim 8 and 19, both of these claims recite, *inter alia*, an apparatus comprising at least one light source adapted to be supported by one of a pool and a spa to illuminate a liquid contained in the one of the pool and the spa (emphasis added). Claims 8 and 19 further recite that the at least one light source is further adapted to generate a remotely controllable variable color radiation output to illuminate the liquid without requiring the use of a color filter (emphasis added).

As discussed above, Havel is directed to a digital multimeter employing a multicolor seven-segment alphanumeric display for measuring and displaying various physical properties such as voltage and current. Again, it is not at all apparent how one of ordinary skill would reasonably contemplate illuminating a liquid with light from the display of Havel's digital multimeter. Nowhere in the reference does Havel disclose or suggest that the digital multimeter should be immersed in a liquid or placed near a liquid so as to illuminate the liquid.

The December 23, 2003 Office Action sets forth reasons for the rejections of independent claims 8 and 19, as follows:

Havel discloses a variable color digital display comprising a light source to be adapted to illuminate and to generate a remotely controllable variable color radiation output to illuminate the light [sic] without requiring the use of a color filter (Col. 16, Line 58)(Col. 7, Line 25)(Fig. 11), where the light source is controlled by a user (Col. 20, Line 31) and at least one processor (168) coupled to the storage device (136) to execute the at least one illumination program (Col. 31, line 50)(Col. 32, Line 12)(Fig. 87).

(December 23, 2003 Office Action, pages 4-5). The Office Action goes on to acknowledge that "Havel is silent on the limitation of the pool or spa" (Id.). However, based merely on Havel's silence in this regard, the Office Action summarily reasons that:

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the pool and the spa in order to generate a remotely controllable variable color radiation output to illuminate the display [sic] without requiring the use of a color filter, since it was known in the art (Col. 7, Line 50)(Fig. 87).

Such an assertion is barely intelligible, and has no basis whatsoever in the Havel reference or the knowledge generally available to one of ordinary skill in the art. Why would one of ordinary skill provide the pool and the spa in order to generate a remotely controllable variable color radiation output to illuminate a *display*, as quoted above? Applicants' claims 8 and 19 relate to the illumination of a liquid, and the Office Action fails to even mention this in its rejection of these claims.

As discussed above, MPEP §2143 requires that three criteria must be met in order to establish a *prima facie* case of obviousness. First, there must be some motivation, either in the cited reference(s) or in the knowledge generally available to one of ordinary skill in the art, to modify the reference(s). Second, there must be a reasonable expectation of success. Third, the reference(s) must teach or suggest all of the claimed features. The teaching or suggestion to modify the reference(s), as well as the reasonable expectation of success, must both be found in the prior art and not based on Applicants' disclosure. It is clear in the foregoing passages cited from the December 23, 2003 Office Action that the Examiner has completely failed to meet his burden with respect to all three of the criteria for establishing a *prima facie* case of obviousness.

In fact, the only teaching or suggestion of record regarding illumination of a pool or spa with variable color radiation comes from the Applicants' own disclosure. As such, any modification of Havel to add a pool or spa is the result of impermissible hindsight reasoning using Applicants' own teachings. If the Examiner believes such motivation is in "the knowledge generally available to one of ordinary skill in the art," the Applicant respectfully requests that Examiner provide support for such allegation pursuant to MPEP §2144.03.

Accordingly, claims 8 and 19 patentably distinguish over Havel, and are in condition for allowance. Claims 2-7, 9-18, and 20-38 depend from one of claims 8 and 19 and are allowable based at least upon their dependency.

Independent claim 53 is directed to an apparatus, comprising at least one remote user interface to remotely control at least one light source adapted to be supported by one of a pool and a spa. The at least one light source is further adapted to generate variable color radiation to illuminate a liquid contained in the one of the pool and the spa. Claim 53 further recites that the at least one remote user interface comprises at least two selectors to allow a user to remotely control at least one parameter associated with the variable color radiation generated by the at least one light source.

The December 23, 2003 Office Action alleges on page 5 that Havel discloses a variable color digital display comprising a light source to be adapted to illuminate and to generate a remotely controllable variable color radiation output to illuminate the light, where two selectors allow a user to remotely control at least one parameter associated with the variable color radiation generated by the light source and at least one processor coupled to a storage device to execute an at least one illumination program. Applicants disagree with this characterization of Havel. As above, the Office Action acknowledges that Havel does not disclose or suggest any light source adapted to be supported by one of a pool and a spa; hence, Havel cannot disclose or suggest a remote user interface to remotely control such a light source. However, the Office Action again reasons that, merely because of Havel's silence regarding pools and spas, it would be obvious to one of ordinary skill in the art to provide a pool or a spa "in order to generate remotely controllable variable color radiation output to illuminate the display without requiring the use of a color filter, since it was known in the art."

As in the rejections of claims 8 and 19, these assertions are virtually unintelligible, and fall far short of satisfying the criteria for establishing a *prima facie* case of obviousness as set forth in MPEP §2143. Accordingly, for reasons similar to those discussed above in connection with claims 8 and 19, claim 53 patentably distinguishes over Havel and is in condition for allowance.

Claims 54-70 depend from claim 53 and are patentable for at least the same reasons.

E. Information Disclosure Statements

Applicants acknowledge the receipt of an initialed copy of the 1449 form filed on January 7, 2004 (first reference to Campagna). However, the Applicants respectfully request that the

Examiner provide an initialed copy of the 1449 form filed on April 10, 2003 (first reference Evans). A copy of this 1449 form and accompanying IDS, together with a stamped post card indicating receipt of same by the USPTO, is attached for the Examiner's reference.

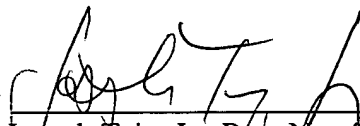
Conclusion

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,

Frederick M. Morgan, et al., Applicants

By: 
Joseph Teja, Jr., Reg. No. 45,157
LOWRIE, LANDO & ANASTASI, LLP
One Main Street
Cambridge, Massachusetts 02142
United States of America
Telephone: 617-395-7000
Facsimile: 617-395-7070

Docket No. C01104/70088
Dated: October 7, 2004